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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/750,629 | 12/28/2000 | Yuanlong Wang | 00CXT0785N | 7116 |

36122 7590 02/23/2005

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| EXAMINER |
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HUYNH, KIM T

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| ART UNIT | PAPER NUMBER |
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2112

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|--|--------------------------------------|------------------------------------|--|
| <p align="center">Office Action Summary</p> | Application No. 09/750,629 | Applicant(s) WANG ET AL. | |
| | Examiner Kim T. Huynh | Art Unit 2112 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____. | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____. 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____. |
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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 4, 6-12, 14,16-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hughes et al. (US Patent 6,747,971)

As per claim 1, Hughes discloses communication circuitry comprising:

- parallel channels configured to transfer communications in parallel with a clock signal; (col.6, line 64-col.7, line 15)
- processing circuitry (fig.3, 305 ie switch fabric) configured to exchange the communications between communication links and the parallel channels; and (col.5, lines 40-55, as result there are parallel links between ingress ports 304a-n and the switch switching planes 309 as illustrated by fig3)
- crossbar integrated circuits(fig.3, 309a-n ie switch planes) configured to receive the communications and the clock signal over the parallel channels, switch the communications based on the clock signal, and transfer the switched communications to the parallel channels. (col.6, line 64-col.7, line 15)

As per claim 11, Hughes discloses a method of operating communication circuitry, the method comprising:

- exchanging communications between communication links and processing circuitry (fig.3, 305 ie switch fabric); (col.5, lines 40-55)
- exchanging the communications and a clock signal between the processing circuitry and parallel channels; (col.6, line 64-col.7, line 15)
- transferring the communications in parallel with the clock signal over the parallel channels; (col.6, line 64-col.7, line 15)
- receiving the communications and the clock signal from the parallel channels into crossbar integrated circuits; (col.6, line 64-col.7, line 15)
- switching the communications in the crossbar integrated circuits(fig.3, 309a-n ie switch planes) based on the clock signal, and transferring the switched communications from the crossbar integrated circuits to the parallel channels. (col.6, line 64-col.7, line 15)
- transferring the switched communication from the crossbar integrated circuits to the parallel channels. (col.5, lines 40-55, as result there are parallel links between ingress ports 304a-n and the switch switching planes 309 as illustrated by fig3)

As per claims 2,12, Hughes discloses wherein the parallel channels are each comprised of parallel differential signal pairs wherein one of the differential signal pairs is for the clock signal. (col.6, line 64-col.7, line 15, ie directing incoming traffic inputs to outcoming outputs)

As per claims 4, 14, Hughes discloses wherein the communications comprise data packets. (col.5, 30-40 ie ATM cells)

As per claims 6, 16, Hughes discloses wherein the communication circuitry comprises a switch fabric. (fig3, 305, ie switch fabric)

As per claims 7, 17, Hughes discloses wherein the processing circuitry is comprised of virtual output queues(fig.3, 312a-n , ie unicast queues) that store the communications prior to switching and that are associated with egress ports. (col.5, lines 56-67)

As per claims 8, 18, Hughes discloses wherein the processing circuitry is comprised of virtual output queues that store the communications prior to switching and wherein each virtual output queue is comprised of sub-queues that are each associated with a different priority. (col.2, line 64-col.3, line 15, ie scheduling processing)

As per claims 9, 19, Hughes discloses wherein the processing circuitry is comprised of a multi-cast virtual output queue(fig.3, 313, ie multicast queue) that stores the communications prior to switching for multi-cast output. (col.6, lines 10-26)

As per claims 10, 20, Hughes discloses wherein the parallel channels include multiplexers to perform bit slicing through the crossbar integrated circuits. (col.5, lines 48-55 ie crossbar arrangement discloses multiplexers)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 13, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes et al. (US Patent 6,747,971) in view of Applicant Admitted Prior Art (AAPA)

Yamamoto discloses all the limitations as above except wherein the communication links comprise serial channels. However, AAPA already discloses crossbar includes cross-points that switch between incoming serial channels.

(pages 3-5)

5. Claims 5, 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes et al. (US Patent 6,747,971) in view Aybay (US Patent 6,185,221)

Hughes discloses all the limitations as above except the communications comprises fixed length data packets. However, Aybay discloses the variable-length packets are segmented into fixed-length switching cells to enable orderly and efficient transfer of packets through the crossbar. (col.7, lines 59-67)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Aybay's teaching into Hughes's system so as to limit the number of inputs and complexity of sending requests to a scheduler, while maintaining fair and efficient scheduling and providing QoS functionality. (col.3, lines 20-25)

Response to Amendment

6. Applicant's argument filed on 10/21/04 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571)272-3635 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 9:00AM- 6:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached at (571)272-3632 or via e-mail addressed to [mark.Rinehart@uspto.gov].

The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.

Kim Huynh

Feb. 18, 2005



TIM VO
PRIMARY EXAMINER